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ABSTRACT

Two investigations examined whether incentives increase the number of survey returns from former students and whether ideographic characteristics, incentives, and multiple mail-outs influence the perceptions of respondents. Survey responses of 125 (Study 1) and 67 (Study 2) baccalaureate graduates in education were used. The survey included 43 Likert-type items associated with educational knowledge and skills. Sampling former students (teacher education programs) across years of experience and level of teaching did not result in response bias for these characteristics. Second, using small monetary incentives (quarter, half dollar, dollar) and a raffle for a professional journal to encourage responding to a survey were unproductive, while establishing a communication network (newsletters) with former students was productive. Third, using multiple requests to increase the number of returns did not affect item response patterns across mail-out requests. Four tables summarize study data. (SLD)

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Two Investigations into the Influence of Incentives and Subject Characteristics on Mail Survey Responses in Teacher Education

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Two Investigations into the Influence of Incentives
and Subject Characteristics on Mail Survey Responses in
Teacher Education

Abstract

These investigations were conducted to examine whether incentives increase the number of survey returns from former students and whether ideographic characteristics, incentives and multiple mail-outs influence perceptions of respondents. Sampling former students (teacher education programs) across years of experience, and level of teaching did not result in reponse bias for these characteristics. Second, using small monetary incentives (quarter, half dollar, dollar) and a raffle for a professional journal to encourage responding to a survey were unproductive while establishing a communication network (newsletters) with former students was productive. Third, using multiple requests to increase the number of returns did not affect item response patterns across mail-out requests.

Two Investigations into the Influence of Incentives
and Subject Characteristics on Mail Survey Responses in
Teacher Education.

Educational decision-makers spend substantial resources in gathering perceptional data from students, former students, and colleagues regarding existing programs and proposed plans and experiences. This observation is particularly appropriate in teacher education where institutions are required to constantly evaluate their programs in order to meet accreditation requirements of the National Council for Accreditation of Teacher Education (NCATE) and state departments of education. Information–gathering efforts which employ survey techniques often play an important role in providing data for academic planning and policy decisions. Given limited resources of personnel and funds plus demanding time schedules, the mail questionnaire often is the most feasible technique for obtaining survey data. Yet the validity and utility of this approach to data gathering depend on the response ratio (percentage of individuals surveyed who complete and return the instrument) as well as response quality (whether respondents actually complete the returned instrument). Adams, and Craig (1983) have reported the follow-up survey conducted by mail is the most used method for obtaining information from graduates of teacher education. Unfortunately, the response ratios from former students vary widely as noted by Katz, Raths, Mohanty, Akemi, and Irving (1981) who reported a range between .15 and 1.0 and Boser (1987) who reported a median response ratio of .52. Certainly a major limitation of the mail survey is a low response ratio which seriously affects whether the respondent group represents the characteristics and perceptions of the population surveyed.

It is not uncommon for survey efforts directed to students to yield response ratios of .30–.40 with even lower values occurring when the subjects lack an association with the institution at the time of the study (Furse, Stewart, and Rados, 1981; Matrose, 1981). It has been hypothesized that former students are less likely to respond to mail surveys than current students because they have a limited interest in the business of the institution and they will not be personally affected by policies and programs emanating from the survey findings (Zusman and Duby, 1984).

Yet Boser (1987) points out there are characteristics of teacher education follow-up

surveys which generalize across institutions and can be taken into account when planning a survey of program graduates. She notes that surveys to former students are sent to individuals who are well educated and likely have some feelings (not neutral) toward the institution sponsoring the survey. Further, she reports many addresses will have changed from records held by the institution requiring address confirming procedures before mailing the survey requests.

A variety of techniques for enhancing survey returns can be found in the literature of public health, marketing, sociology, political science and education. These techniques include: advance notification of the upcoming survey, multiple and intensive follow-up correspondence to non-respondents, hand stamped postage and personalized cover letters, express mail delivery of questionnaires, the use of incentives both monetary and non-monetary, and multiple incentives (Anderson, Niebuhr, and Gum, 1987; Armstrong, 1975; Dillman, 1978; Furse, Stewart and Rados, 1981; Heberlein and Baumgartner, 1978; Huck & Gleason, 1974; Kapes, 1974; Morris,1987; Sandoval & Devitt, 1987; Tollefson, Tracy and Kaiser, 1984; Zusman and Duby, 1984). Yet Jackson and Schuyler (1984) have reported mixed results through their application of techniques thought to enhance returns. To illustrate, they reported that fewer responses were remitted when "cute" reminders were sent rather than businesslike requests and when survey requests were mailed in April rather than February; however, more responses occurred when reminders that included another instrument were sent.

The prepayment of monetary incentives is thought to be a powerful technique for motivating mail survey participation. Armstrong (1975) and Linsky (1975) reported that monetary incentives have consistently resulted in higher response ratios. Additionally, the most cost effective amount of money to offer is considered to be $.25, yet greater response ratios have resulted from $1.00 incentives. Further, monetary incentives have been found to be most effective when enclosed with the first mailing rather than promised upon receipt of the completed questionnaire (Armstrong, 1975). Finally, although there is concern that the use of monetary incentives introduces bias, there is no evidence to support this potential problem (Nederhof, 1983; Zusman & Duby, 1984).

Alternatives to monetary incentives reported in the literature are raffles and cash lot-

teries. Morris (1987) successfully employed a raffle of a professional journal in nursing as an incentive to enhance responses to a survey addressing the curriculum in nursing education. Similarly, Sandoval and Devitt (1987) have described how a $50 cash lottery combined with follow-up mailings and telephone calls produced a response ratio of .58 from a sample of undergraduate women twenty five years of age and under. These investigators considered this response ratio to be quite satisfactory given the .30 to .40 response ratios produced from surveys of college students reported by Matross (1981). The present investigations incorporate elements from survey research reported previously in examining incentives to enhance response ratios; and in assessing potential influences on perceptions of respondents due to their ideographic characteristics, incentives to enhance returns, and multiple requests for information. This purpose statement phrased as research questions to guide the investigation became:

1. Do incentives influence the response ratio from respondents?
2. Does the date of graduation, level of work experience and incentives influence the perceptions of respondents?
3. Do perceptions of subjects who responded to an initial request differ from perceptions of subjects who responded to a second request for information?

Experiment 1

Method

This survey was conducted during the 1985 spring semester. Typically, information gathering from teacher education graduates is an iterative process within the College of Education occurring due to information needs for program development and for accreditation reports. This survey was conducted to meet such information needs.

Subjects. A random stratified sample of 297 subjects was selected for this investigation. This sample, stratified by year of graduation, represents 21.6% of the baccalaureate degree graduates (N =1,375) from the Department of Educational Curriculum and Instruction at a large land grant university in the southwest during a 5-year period (May 1980 through

December 1984). Subjects for this investigation were identified from graduation announcements beginning with the spring 1980 commencement list and continued through the fall 1984 commencement list. The percentage of male candidates during this period was 4.1% and the percentage of minority candidates was 3.2%. The corresponding percentages of male and minority candidates in the returns were 9% and 5.4%, respectively.

The number of subjects selected for this inquiry was based on the assumption of a response ratio of .5 yielding 148 completed instruments (297 × .5.) A sample of this size would provide the statistical power of .56 assuming an alpha level of .05 and an effect size of .20 for the various statistical tests conducted in this investigation (Cohen,1977).

Instrumentation. One instrument was developed for this investigation which requested the subject's name, current address, year of graduation, current occupational status, and contained 43 Likert–type items associated with pedagogical knowledge and skills. Following these items, three additional questions were listed that sought yes/no reponses regarding a departmental newsletter. The instrument concluded with an open–ended item (additional comments). Instructions presented immediately after the item requesting occupational status of the subject requested individuals not teaching to remit the instrument without responding to the Likert items. Figure 1 presents a portion of the items used in this inquiry. An alpha coefficient of internal consistency was determined for the 43 Likert items to be $\alpha = .93$. The Likert items sought perceptions about teacher education curricula in general, not the program the former student had experienced. Seeking advice from program graduates on necessary pedagogical knowledges and skills was designed to convey the importance of their professional views and not to communicate a request for testimonials about the program they had experienced.

The instrument, printed on a single sheet of blue 100-lb index card stock, was folded in such a manner so the return address and postage label appeared on an external surface. The courier print font was used for the instrument with black ink. Subjects completing the questionnaire simply stapled or taped the folded instrument and remitted it by mail. Recommendations of Sudman and Bradburn (1982) regarding mail survey instruments were incorporeted into the instrument's format.

Place figure 1 here

Data collection. Addresses for the subjects were obtained from one of the following sources: departmental newsletter mailing list, records of inactive students held by the department and college, and the address file of the Association of Former Students. Concern for the accuracy of addresses drawn from these latter sources, because of the dated nature of the records, was well founded because 38 questionnnaires were returned undelivered.

Because the influence of incentives on the response ratio was of interest in this investigation, 40 subjects from the total sample were randomly selected to receive token monetary incentives (quarter) with the initial survey request. Subsequently, two requests containing quarters were returned undelivered. Further, it was noted that 88 or 33.6% of the total sample had received one or more departmental newsletters. It was assumed the newsletters served to foster a stronger association between the former students and their Alma Mater thus encouraging a reponse to the survey request.

The initial mailout was placed in the mail Tuesday, April 23, 1985. The mailout consisted of a cover letter that emphasized the opportunity to influence teacher preparation curricula and a questionnaire. The quarter was attached to the cover letter for those students selected to receive the monetary incentive. A sentence in their cover letters stated that the money was intended as a small token of appreciation for their assistance.

A second mailout was conducted 3 weeks after the original mailing (May 16,1985) and excluded subjects whose questionnaires were returned undelivered. Other subjects who had not responded by that time were sent a follow–up packet that contained a letter explaining the importance of their response to program development and another copy of the questionnaire. Data receive through June 17 were included in findings of this report although a closing date was not mentioned in the request.

We were aware of the potential difficulty of achieving a substantial return given the mailing date of the surveys and the brief period between the initial and follow-up mailings. The literature (Jackson & Schuyler, 1984) and our experience with past survey efforts both signaled limitations with our data collection plans. Unfortunately, other projects and

scheduled efforts delayed the planning and implementation of this investigation until late in the spring semester.

Results

Survey responses were received from 125 former students or 48.3% of the 259 subjects who were thought to have received questionnnaires. Sixteen subjects who were not teaching heeded the instructions on the instrument and returned the survey completing only the biographic information. Because 38 undelivered requests were returned by the postal service, at least 12.8% (38/297) of the addresses were inaccurate. Also, because 7 of the undelivered requests were from the second mailing based on the postmark date, it is possible that even a larger percentage of addresses were inaccurete and simply were not returned.

The first mailing yielded 101 returns (70 returned instruments and 31 undelivered packets), while the second mailing resulted in 62 additional returns (55 returned instruments and 7 undelivered packets). This response ratio (.483), was lower and statistically different than previous mail surveys conducted with degree recipients. Past mail surveys were conducted during the middle of the academic year (December – February), while the present effort was conducted later in the spring (April – May). It appears that at least one contributing factor to the smaller response was timing of the project, i.e., late spring (April – May). Thus one recommendation, ancillary to the findings associated with the questions of this investigation is to conduct mail surveys with former students during the middle stages of the academic year.

Another potentially adverse influence in the response ratio of this survey was having been asked to repond to previous surveys conducted by the department. Given the nature of earlier efforts, only one survey could have overlapped with the present investigation. A chi – square statistic was applied to the returns from the current sample, grouped by year of graduation to determine whether the response ratios across cohorts were statistically different. This analysis was not statistically significant indicating that potentially overlapping survey requests from the same source was not a limiting factor.

The initial research question asked whether using incentives to encourage responding

to a survey request influences the response ratio and the perceptions of those who do respond to the survey request. As noted in the data collection section, incentives consisted of a newsletter and/or quarter. Table 1 provides a summary of the response ratios and statistical comparisons associated with incentives used in this inquiry. Establishing a communication network via newsletters mailed to former students enhanced the corresponding response ratio compared to the no–incentive condition. The application of chi square to these two conditions yielded a statistically significant test.

In constrast to the statistical tests incorporating newsletters, the chi – square test for the monetary incentive and no incentives was not statistically significant. However, an unexpected finding was the lower response rate for the quarter incentive compared to the no – incentive condition.

Place table 1 here

Research question two sought to determine the influence of ideographic characteristics of subjects, (i.e., date of graduation and level of work experience), and incentives on their responses. Responses to the survey items were converted to the following numerical values for analyses by the SPSSX statistical package (SPSSX, 1984): 5 = substantial emphasis, 4 = moderate emphasis, 3 = undecided, 2 = minimal emphasis, and 1 = no emphasis. An alpha level of .05 was used as criterion for statistical significance in this investigation. Descriptive statistics and inferential tests (F ratios) of regression models were performed to compare perceptions of subjects responding to the instrument. Descriptive analysis revealed instances of missing data across the variables, thus the total samples for subsequent analyses were expected to vary. Given the unequal number of responses categorized by the variables, that is, date of graduation ranged from 13 to 29, level of work experience ranged from 11 to 49 and incentives ranged from 6 to 59, a forward selection regression model with one predictor was used to provide inferential tests of perceptions across the 43 survey items. Date of graduation served as the independent variable for the initial set of regression analyses. These procedures were repeated with level of work experience and incentives serving as the independent variables.

Table 2 provides a summary of the inferential tests across the items. Although no variations in response patterns were found when date of graduation served as the basis for comparison, two items produced statistically different response patterns when level of work experience served as the basis for comparison. These items were *reading strategies for content areas* with means ranging from 4.7 (teaching elementary school) to 3.5 (teaching high school), and *instructional application of microcomputers* with means ranging from 4.7 (teaching high school) to 3.9 (teaching kindergerten). Findings from these analyses suggest that the ideographic variables of subjects, year of graduation and level of work experience, did not appreciably influence perceptions of subjects responding to this survey on curricula for teacher education. The inferential tests associated with the issue of response bias due to incentives yielded no instances where the response patterns were statistically different.

Place table 2 here

Research question three asked whether perceptions of subjects who responded to an initial survey request differed from perceptions of subjects who responded to a second request. Two comparisons were found to be statistically different when the responses were categorized by whether the return occurred in conjunction with the first or second request for survey information from former students. These comparisons were made with the same procedures that were used for the previous research question. Statistically different responses occurred for the items *reinforcement and praise* and *leadership styles of administrators*. Greater program emphasis (higher scores) were recorded for reinforcement and praise from responses to the initial survey request (means: 4.7— first mailout, 4.3—second mailout). However, for leadership styles of administrators, this phenomenon was reversed with greater program emphasis occurring for responses to the second survey request (means: 3.3—first mailout, 3.9—second mailout). An answer to the third research question based on these findings is that perceptions of subjects were not markedly different whether they responded to an initial or second request for information on a mail survey.

Experiment 2

Method

This survey was conducted during the 1987 spring semeter. Given the unexpect d finding from experiment 1 regarding the returns associated with 25 cent incentives, this investigation was conducted with monetary incentives ranging from a quarter to a dollar. In addition, a raffle for a professional journal was included as an incentive. An arbitrary limit of 20 subjects per incentive condition was established, because the incentives were provided from the personal resources of the investigators.

Subjects. A random sample stratified by year of graduation of 100 subjects was selected from the baccalaureate degree graduates from the Department of Education Curriculum and Instruction in the same institution as in experiment 1. This sample represents 17.1% of the 585 baccalaureate graduates between graduation exercises in May 1985 and August 1986. These graduating classes were selected to prevent resampling subjects who participated in experiment 1. The percentage of male candidates during this period was 3% and the percentage of minority candidates was 4%. The corresponding percentages of males and minority candidates in the returns were 3% and 3%, respectively.

Assuming a response ratio of .6, sixty completed instruments ($.6 \times 100$) were expected to be returned. A sample this size would yield the statistical power of .29 assuming an alpha level of .05 and an effect size of .20 for the statistical tests conducted in experiment 2 (Cohen, 1977). However, as noted previously cost not statistical power determined the size of the sample.

Instrumentation. The survey instrument for this experiment was identical to the instrument used in experiment 1. Application of this instrument was thought to be appropriate, since desired skills and knowledges for teacher preparation had not changed in the literature from the time the instrument was developed.

A second reason the instrument was considered to be appropriate and timely was that recent legislation had mandated changes in teacher preparation programs throughout the state and teachers' awareness of these legislated changes were heightened by extensive press coverage of the educational reforms.

Data Collection. For this investigation, subjects were identified from graduation announcements from 1985 (May, August, December) and 1986 (May, August). One hundred subjects were randomly selected from these commencement lists. Addresses for the selected graduates were obtained from records of inactive students held by the department and college, and the address file of the Association of Former Students. Given the recency of graduation, it was thought these addresses would be current and accurate. However, eight questionnaires were returned undelivered.

Since the influence of different incentives on response ratios was the focus of this second investigation, subjects were assigned by a second random selection process into one of five (n = 20) incentive conditions (i.e., no incentives, \$.25,\$.50,\$1.00 and raffle). Subjects in these groups, save the no incentive condition, received the incentive with the initial survey request. Individuals in this sample were not receiving departmental newsletters. Thus the incentive, newsletter, was not a factor in this investigation.

The initial mailout was placed in the mail Monday, February 23, 1987. The mailout consisted of a questionnaire and a cover letter encouraging the recent graduate to participate in an opportunity to influence teacher preparation curricula. The coins (quarter, half dollar) were secured to a 3 × 5 note card and placed inside the folded cover letter for those selected to receive these incentives. Similarly, uncirculated dollar bills were placed inside folded cover letters for those subjects receiving the \$1.00 incentives. A sentence in these letters stated the money was intended as a small token of appreciation for their assistance. Letters for subjects in the raffle group contained the following information at the bottom of the page in lieu of money.

> NOTE: INCENTIVE FOR COMPLETING QUESTIONNAIRE
> A drawing will be made from the names of individuals submitting this questionnaire. The prize will be a year's subscription to an educational journal.

A second mailout was conducted one month later (March 25, 1987) and excluded subjects whose questionnaires were returned undelivered. Subjects who had not responded by that date were sent a second questionnaire and a letter explaining the importance of their response for program development. No incentives were placed in the second request. Questionnaires received through April 24 were included in the data set for this investiga-

tion.

Given the limited returns in experiment 1 (48.3%), efforts were extended to conduct this survey two months earlier in the school year (February rather than April). However, other data collection procedures involving time followed in experiment 1 were considered in the execution of experiment 2. For example, while the period between mailout differed by one week across the experiments (i.e., 24 days – expt. 1, 31 days –expt. 2) the period between the second mailout and closing date for receiving questionnaires were nearly equal (32 days – expt.1, 31 days – expt. 2).

Results

Questionnaires were received from 67 graduates of the 92 subjects who were thought to have received a survey request. Five questionnaires were remitted with only the biographic informaton completed. In these instances as in experiment 1, subjects apparently followed instructions on the questionnaire which requested only their name, address and occupational status if they were not employed in an instructional capacity. An additional instrument was received that was complete save the biographic information but, it was excluded because the biographic information was necessary to determine the appropriate incentive condition. Sixty–six of the returned questionnaires provided partial data while 61 of the returns provided complete data for subsequent analysis.

The first mailing yielded 49 returns (41 returned instruments and 8 undelivered packets), while the second mailing resulted in 26 additional returns. The response ratio (.728) was higher and statistically different $\chi^2(1, N = 351) = 15.54, p < .001$ than the response ratio attained in experiment 1. While recency of graduation potentially explains the higher response ratio in experiment 2, response ratios were compared from 5 different graduation classes in experiment 1 and were found not to be statistically different. An alternate explanation, which is suported in the literature (Jackson & Schuyler, 1984), for the higher response ratio in experiment 2 is that conducting the survey in February in contrast to April contributed to the larger response ratio.

Certainly another potential influence was the proportion of subjects receiving incentives in experiment 2 compared to experiment 1, (i.e., .8 – expt. 2, .47 – expt. 1). The literature (Armstrong, 1975; Linsky, 1975; Nederhof,1983) supports the view that incen-

tives increase response ratios.

The issue of whether incentives encourage subjects (graduates of teacher education programs) to respond to a survey request while treated in experiment 1 was addressed again in experiment 2 because the findings of experiment 1 were inconsistent across incentive conditions. As noted previously, 5 incentive conditions were established for this investigation. Table 3 provides a summary of the response ratios and statistical comparisons associated with the incentives used in experiment 2.

Place table 3 here

The chi–square tests for the various incentive conditions and the no–incentive condition were not statistically significant. These findings correspond to the finding in experiment 1 where the quarter incentive and no–incentive conditions were found to statistically equivalent. Increasing the value of the incentive did not increase the response ratio as Armstrong (1975) has reported. In fact, the largest response ratio occurred with the quarter incentive. Similarly, the prospect of "winning" a professional journal subscription did not encourage greater participation in the survey. This finding is not consistent with the findings of Sandoval and Devitt (1987), although the reward in their case was actual cash rather than a subscription to a professional journal, nor with the results reported by Morris (1987).

Whether incentives of different financial value influence perceptions of respondents to a mail survey was addressed in research question 2. Responses to the survey items were treated in an identical fashion to data obtained in experiment 1. That is, responses were converted to a 5 point scale, then treated with forward selection regression models to provide inferential tests of perceptions noted for each survey item. Table 4 provides a summary of the inferential tests.

Place table 4 here

Data analysis associated with the issue of response bias due to the various incentives produced one instance, *learner guidance* or *cues to aid learning* where the independent

variable yielded a statistically significant test. In this case, former students receiving the incentive of a raffle rated the item *cues* highest ($\bar{X} = 4.5$) with the no incentive condition registering the lowest mean, ($\bar{X} = 3.9$). No logical explanation is evident, save the probability of 2 significant tests in 43 trials due to chance, since the alpha level of .05 was established apriori. Collectively, the results of experiment 1 and 2 support the generalization that varying incentives do not produce a response bias.

The influence of characteristics of subjects and multiple mailings were addressed in research questions 2 and 3 respectively. Collectively, one test from 129 analyses yielded a statistically significant result. This test occurred for the item, *reading strategies for content areas* when the independent variable, level of work experience was being examined. Similar to the findings in experiment 1, means for this item ranged from 4.7 (teaching kindergarten) to 3.7 (teaching high school). These analyses support the findings from experiment 1 that characteristics of subjects and multiple mailings do not appreciably influence perceptions of subjects responding to a survey on curricular elements for teacher education.

Discussion

Educational decision makers, especially those in teacher education often rely on mail surveys to gather information because this technique is adaptable to a population with wide geographic dispersion and is relativelly low cost especially when compared with telephone and vis-a-vis interviews. An additional positive attribute is that mail surveys can be conducted in a relatively brief time interval. Yet attempts to use the mail questionnaire are often frustrating because of the difficulty in motivating sufficient participation, especially from former students.

The initial research question addressed whether incentives enhanced the return of survey instruments. The findings of these experiments were mixed regarding the use of incentives to increase response ratios. In experiment 1, individuals who had received newsletters from the department prior to receiving the questionnaire responded more often than those who had not received the departmental newsletter. Perhaps the mechanism at work in this case was salience, with those subjects who had received the departmental newsletter being aware of program development efforts through items in the newsletter

and thus understood the significance of their responses to the program development effort. This explanation is consistent with the importance Heberlein and Baumgartner (1978) place on salience in motivating individuals to respond to mail surveys.

In contrast, the use of a quarter in experiment 1 resulted in a smaller response ratio than when no incentives were used. This finding was contrary to the evidence that monetary incentives increase response ratios (Armstrong, 1975; Furse et al., 1981; Huck & Gleason, 1974; Linsky, 1975; Zusman & Duby, 1987) and led to experiment 2. Evidently a quarter was not perceived as a token incentive by former students; perhaps this phenomenon occurred because inflation has devalued the quarter to the extent that it is no longer considered the "reward" it was a decade ago. Experiment 2 was designed to test this explanation. Assuming the devaluation argument was sound and noting the success Zusman and Duby (1984) reported for half-dollar and dollar incentives in increasing response ratios, different monetary incentives were established. In addition, a raffle for a professional journal was added as an incentive because of the success Morris (1987) reported with this technique. The results of experiment 2 indicate the incentive power of quarters, half dollars and dollars were not sufficient to increase the respective response ratios to be different statistically from the response ratio of former students who did not receive monetary "incentives". Similarly, the raffle failed to increase the number of responses to be statistically different from the responses of former students who were in the no-incentives group. Perhaps the results of experiment 2 are explained by Sandoval and Devitt (1987) who suggest the attitudes of subjects toward monetary incentives up to one dollar are very similar and the symbolic value of these incerntives are likely equal. This explanation is consistent with the findings of experiment 2 regarding monetary incentives. Further, they suggest that for a raffle to be successful in increasing response ratios the survey must have credibility and the subjects must feel they are lucky and have a good chance of winning the raffle.

A contrasting view is that graduates of teacher preparation programs are motivated by professional duty and feelings toward their Alma Mater and respond to surveys addressing the preparation of teachers because of their sense of responsibility to the profession and the program they completed. From this perspective, small monetary "rewards" and a

raffle would not encourage former students to respond and might be considered to be inappropriate by some former students. A sense of professional responsibility to improve the profession may be an additional characeristic of subjects to add to Boser's (1987) list of common features of teacher education follow–up surveys.

Research question 2 directed our attention to whether date of graduation, level of work experience and incentives influence the perceptions of those responding to the survey requests. These variables (graduation date, teaching level, incentives) were treated as categorical variables for a series of analyses. The resulting analyses yielded four statistically different item response patterns across 256 comparisons. The low percentage (1.6%) of statistically different items resulting from these analyses is less than the alpha level (.05) established for these experiments. In other words, the statistically different items in these analyes could have occurred due to chance. A possible exception was the item addressing reading strategies, that was perceived differently by teachers of young children when compared to secondary teachers across both experiments. Given this possible exception, the findings from these experiments indicate date of graduation, level of work experience,and incentives did not infllluence the perceptions of former students regarding topics necessary for teacher preparation curricula. The finding that response incentives did not influence item response patterns is consistent with the work of Nederhof (1983) and Zusman and Duby (1984) who report no response bias due to the use of incentives to increase participation in mail surveys.

The final research question of these experiments sought an empirically supported response to the concern whether differences in perception to the content of the questionnaire would occur across requests for information. Results from these experiments indicate that perceptions of former students were not markedly different across the initial and second requests for information.

Generalizing these findings to the survey research literature must be done with caution because these findings are inherently linked to the content of the questionnaire. And although the content of the questionnaire is rather commonplace in teacher education, it certainly does not generalize to all mail survey instruments. Yet the results of these experiments support the wide application of mail surveys for assessing program development

needs in teacher education for a number of reasons. First, the stability of responses to topics of general professional interest across subject characteristics serves to emphasize the utility of mail surveys without exhaustively sampling all segments of a population. Second, using incentives to increase the number of survey responses does not tend to introduce response bias among subjects. Finally, multiple requests to increase the number of returns do not appear to affect response patterns across requests. These observations regarding subject characteristics, incentives, and multiple mailouts are offered as considerations for those planning to conduct a mail survey.

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Skill/knowledge	Program emphasis My rating of the emphasis that should be placed on the following content/skills in teacher education is:				
Domain: Instructional methods, strategies media technology	Substantial emphasis	Moderate emphasis	undecided	Minimal emphasis	No emphasis
1. Time management (academic engaged time of learners)	—	—	—	—	—
2. Learner motivation	—	—	—	—	—
3. Roles of prerequisites (reviewing prerequisite learning)	—	—	—	—	—
4. Intended learning outcomes (objectives)	—	—	—	—	—
5. Learner guidance (cues to aid learning)	—	—	—	—	—
6. Learner performance (application of new learning)	—	—	—	—	—
7. Feedback (information on appropriateness of performance)	—	—	—	—	—

Figure 1 — Sample of Likert items on survey instrument.

Table 1 — Influence of Incentives on Response Ratios of Subjects Mailed Questionnaires

Incentive condition	Number of responses	Number of instruments mailed[a]	Response ratio	χ^{2b}	Prob
No incentives	59	136	.434	—	—
Newsletter	50	85	.588	6.39	< .02
Quarter	10	32	.313	1.44	*ns*
Quarter and newsletter	6	6	1.000	6.27	< .02
Total	125	259	.483		

[a]Number adjusted due to the return of undelivered instruments.
[b]2 × 2 contigency table (designated reward condition compared with no incentives).

Table 2 — Analysis Summary of Subject Characteristics, Incentives, and Multiple mailings on Survey Responses

Variable	Number of significant tests
Characteristics of subjects	
Date of graduation	0/43
level of work experience	2/43
Incentives	0/43
Multiple mailings	2/43

Table 3 — Response ratio of Mailed Questionnaires Given Different Incentives

Incentive condition	Number of responses	Number of instruments mailed[a]	Response ratio	χ^{2b}	Prob
No incentives	12	20	.60	—	—
Quarter	13	16	.81	1.02	*ns*
Half-dollar	14	19	.74	.32	*ns*
Dollar	14	18	.78	.69	*ns*
Raffle	13	19	.68	.05	*ns*
Total	66	92	.72		

[a]Number adjusted due to the return of undelivered instruments.
[b]2 × 2 contigency table (designated reward condition compared with no incentives).

Table 4 — Summary of Inferential Tests of Incentives, and Subject Characteristics on Survey Responses

Variable	Number of significant tests
Characteristics of subjects	
Date of graduation	0/43
level of work experience	1/43
Incentives	1/43
Multiple mailings	0/43